



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/669,556

09/26/2000

David E. Simmen

ST9-99-184

4709

7590

12/05/2006

George H Gates  
Gates & Cooper LLP  
Howard Hughes Center  
6701 Center Drive West - Suite 1050  
Los Angeles, CA 90045

EXAMINER

NGUYEN, CINDY

ART UNIT

PAPER NUMBER

2161

DATE MAILED: 12/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center"><b>Office Action Summary</b></p>	<b>Application No.</b> 09/669,556	<b>Applicant(s)</b> SIMMEN, DAVID E.	
	<b>Examiner</b> Cindy Nguyen	<b>Art Unit</b> 2161	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 October 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-11,13-21 and 23-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-11,13-21 and 23-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☐ All   b) ☐ Some \*   c) ☐ None of:  
 1. ☐ Certified copies of the priority documents have been received.  
 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
 \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

This is in response to communications filed 10/19/06.

#### ***Terminal Disclaimer***

The terminal disclaimer filed on 11/01/06 disclaiming the terminal portion of any patent granted on this application has been reviewed and is accepted. The terminal disclaimer has been recorded.

#### ***Response to Arguments***

Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3-4, 11, 13-14, 21, 23-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Zaharioudakis et al. (US 2003 0088558).

Art Unit: 2161

Regarding claims 1, 11 and 21, Bello disclose: a method, an apparatus and an article of manufacture comprising a program storage medium readable by a computer and embodying one or more instructions executable by the computer to optimizing execution of a query that accesses data stored on a data store connected to a computer (0031, Zaharioudakis ) comprising:

generating cardinality estimates (estimate the cost of the rewritten query) for one or more query execution plans for the query using statistics of one or more tables (system held statistics on the data to be access as the size of the table, the number of distinct values in particular column, paragraph 0041, Zaharioudakis ) that vertically overlap the query (determines whether the content of an AST overlaps with the content of an SQL query, paragraph 0043);

using the generated cardinality estimates to determine an optimal query execution plan for the query ( 0043, Zaharioudakis);

executing the optimal query execution plan for the query in order to access the data stored on the data store connected to a computer and then output the accessed data (0041 and 0043, Zaharioudakis).

Regarding claims 3, 13 and 23, all the limitations of these claims have been noted in the rejection of claims 1, 11 and 21 above . In addition, Zaharioudakis disclose: wherein the statistics of the one or more automatic summary tables are used to improve a combined selectivity estimate of one or more predicates of the query (0041, Zaharioudakis).

Regarding claims 4, 14 and 24, all the limitations of these claims have been noted in the rejection of claims 3, 13 and 23 above. In addition, Zaharioudakis disclose: wherein the predicates are applied by one of the automatic summary tables (0048, Zaharioudakis).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5-10, 15-20, 25-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zaharioudakis et al. (US 20030088558) (Zaharioudakis) in view of Bello et al. (US 6496819).

Claims 5, 15, and 25, all the limitations of these claims have been noted in the rejection of claims 3, 13 and 23 above. In addition, Zaharioudakis didn't disclose: wherein the selectivity estimate comprises a ratio of a cardinality of the automatic summary table to a product of cardinalities of base tables referenced in the automatic summary table and the query. On the other hand, Bello discloses: wherein the selectivity estimate comprises a ratio of a cardinality of the automatic summary table to a product of cardinalities of base tables referenced in the automatic summary table and the query (col. 10, lines 45-67, Bello). Thus, at the time invention was made, it would have been obvious to a person of ordinary skill in the art to include wherein the selectivity estimate comprises a ratio of a cardinality of the automatic summary table to a

Art Unit: 2161

product of cardinalities of base tables referenced in the automatic summary table and the query in the system of Zaharioudakis as taught by Bello. The motivation being to enable the query reduction factor to estimates how useful it will be to access the materialized view to process the received query (col. 10, lines 42-45, Bello).

Regarding claims 6, 16 and 26, all the limitations of these claims have been noted in the rejection of claims 3, 13 and 23 above. In addition, Zaharioudakis didn't disclose: wherein zero or more predicates of the query are applied by one of the automatic summary tables and wherein the remaining predicates are eligible to be applied on the automatic summary table. On the other hand, Bello discloses: wherein zero or more predicates of the query are applied by one of the automatic summary tables and wherein the remaining predicates are eligible to be applied on the automatic summary table (col. 10, lines 20-45, Bello). Thus, at the time invention was made, it would have been obvious to a person of ordinary skill in the art to include the remaining predicates are eligible to be applied on the automatic summary table in the system of Bello as taught by Bello. The motivation being to enable the system determines whether the materialized view is actually eligible to be used in rewrite of the received query to reduce the execution cost of the query.

Regarding claims 7, 17 and 27, all the limitations of these claims have been noted in the rejection of claims 6, 16 and 26 above. In addition, Zaharioudakis /Bello discloses: wherein a

predicate is eligible to be applied on the automatic summary table if it can be evaluated using the output columns and expressions of the automatic summary table (col. 11, lines 30-55, Bello).

Regarding claims 8, 18 and 28, all the limitations of these claims have been noted in the rejection of claims 7, 17 and 27 above. In addition, Zaharioudakis /Bello disclose: further comprising determining a subpredicate combined selectivity estimate of the unapplied eligible predicates using column distribution statistics of the automatic summary table (col. 10, lines 30-36, Bello).

Regarding claims 9, 19 and 29, all the limitations of these claims have been noted in the rejection of claims 8, 18 and 28 above. In addition, Zaharioudakis /Bello disclose: wherein a cardinality ratio comprises a ratio of a cardinality of the automatic summary table to a product of cardinalities of base tables referenced in the automatic summary table and the query (col. 10, lines 45-67, Bello).

Regarding claims 10, 20 and 30, all the limitations of these claims have been noted in the rejection of claims 9, 19 and 29 above. In addition, Zaharioudakis /Bello disclose: wherein a cardinality ratio comprises a product of subpredicate combined selectivity estimate and the cardinality ratio (col. 10, lines 45-67, Bello).

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Subramanian et al. (U.S 6275818). Cost based optimization of decision support queries using transient views.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cindy Nguyen whose telephone number is 571-272-4025. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gaffin Jeffrey can be reached on 571-272-4146. The fax phone numbers for the



Art Unit: 2161

organization where this application or proceeding is assigned are 571-272-4025 for regular communications and (571) 273-8300-7240 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

*CN*  
Cindy Nguyen  
November 26, 2006

*[Signature]*  
JEFFREY GAFFIN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100

*[Signature]*  
JEFFREY GAFFIN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100